COMMUNICATION DEVICE HAVING MULTIPLE DISPLAYS AND METHOD OF OPERATING THE SAME

The present application is a divisional application of parent application Ser. No. 08/869,543 filed on Jun. 5,1997 and assigned to the assignee of the parent application.

FIELD OF THE INVENTION

The present invention relates generally to communication devices having multiple displays, and more particularly to portable radio communication devices having multiple displays.

BACKGROUND OF THE INVENTION

Many portable communication devices, such as cellular telephones, include a housing defining relatively large front and rear surfaces with thin sides. Such devices may be thin enough to fit within a pocket of clothing or to carry on a belt or a holster. Typically, the front surface of the device has a user interface which includes one or more components such as a keypad or a display. When the device is carried as described above, the user interface may not be very accommodating to a user. For example, when such a device is carried on a belt of a user, the user interface is completely or partially obstructed from the user's view.

In addition, some devices have flaps which cover the user interface for protection against various elements such as dirt or rain, or for other reasons such as for protection against inadvertent actuations at the keypad. Although highly beneficial, such flaps may similarly or further inhibit viewing of the user interface.

Accordingly, what is needed is a communication-device having a user interface that is more accommodating to a user, and additionally one that does not substantially increase a power consumption or cost of the communication device.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an illustration of a mobile station having a first display area and a second display area.

FIG. **2** is an illustration of the mobile station of FIG. **1**.

FIG. **3** is an illustration of an alternate embodiment of a mobile station.

FIG. **4** is an illustration of the mobile station being worn in a holster by a user.

FIG. **5** is a schematic block diagram of electrical circuitry of the mobile station.

FIG. **6** is a schematic block diagram of a first alternate embodiment of display components of the electrical circuitry.

FIG. **7** is a schematic block diagram of a second alternate embodiment of the display components.

FIG. **8**A is a first part of a flowchart describing the operation of the mobile station.

FIG. **8**B is a second part of the flowchart describing the operation of the mobile station.

FIG. **9** is an illustration of another alternate embodiment of a mobile station.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

According to the present invention, a portable communication device comprises a housing, a first display area, and a second display area. The first display area is disposed in and outwardly directed from a front of the housing and the second display area is disposed in and outwardly directed from a side of the housing. The housing may include a housing portion movable to an open position and a closed position, where the first display area is covered by the housing portion in one of the first and the second positions.

FIG. **1** shows a communication system **100** comprising a mobile station **102** and a base station **104**. Mobile station **102** and base station **104** communicate via radio frequency (RF) signals to provide wireless communications and features such as paging, telephone, and short messaging features. Preferably, communication system **100** provides cellular telephone communications and additional communication services.

Mobile station **102** comprises a housing **105**, a user interface **106**, and a user interface **108**. To transmit and receive the RF signals to and from base station **104**, mobile station **102** also includes an antenna **110**. Mobile station **102** may also include an accessory jack **158**.

Housing **104** includes a housing portion **112** and a housing portion **114**. Housing portion **114** is movable between a first position and a second position. The first position may be referred to as an open position, such as that shown in FIG. **1**, and the second position may be referred to as a closed position, such as that shown in FIG. **2**. Housing portion **114** may be generally referred to as a movable element or a flap. Also, housing portions **112** and **114** may be generally referred to as lower and upper housing portions, respectively. Housing **104** is made from a durable material, preferably plastic.

In the embodiment shown, housing portion **114** is coupled to housing portion **112** via a hinge **116** providing a rotation for housing portion **114** to and from the first and the second positions as indicated by an arrow **152**. Other suitable mechanisms for providing movement are known in the art and may be used accordingly.

Housing portion **112** defines a surface **120** (forming a front of housing **105**), a surface **122** (forming a top side of housing **105**), a surface **124** (forming a bottom side of housing **105**), a surface **126** (forming a left side of housing **105**), and a surface **128** (forming a right side of housing **105**). Each of surfaces **122**, **124**, **126**, and **128** meet with and are adjacent and generally perpendicular to surface **120**. Widths of surfaces **122**, **124**, **126**, and **128** are generally much smaller than a width of surface **120**. For example, the width of surface **120** may be about four times that of each width of surfaces **122**, **124**, **126**, and **128**.

Preferably, the width of surface **120** is about 5 centimeters and each width of surfaces **122**, **124**, **126**, and **128** is about 1.25 centimeters.

Housing portion **114** is sized and shaped similarly to that of housing portion **112** and includes similarly defined surfaces.

Sized and constructed as described above, mobile station **102** may be described as being "wearable," that is, it is sized to fit into a pocket or attach to clothing using a holster or a belt clip as will be shown and described further below in relation to FIG. **4**.

User interface **106** includes a display area **130** for displaying information. User interface **106** may be referred to as a pager user interface. In the embodiment shown, display area **130** is carried on and outwardly directed from surface **122**. Display area **130** presents visual information directed in a direction indicated by an arrow **154** of FIGS. **1** and **2**. Display area **130** may include a display window and display elements discussed in more detail below.